Kentucky. **METHODS:** Regression models were calculated to predict methamphetamine-related hospitalizations from 2010 county level Kentucky data. Explanatory factors include PSE sales (in grams), number of clandestine lab incidents reported, USDA urban/rural indicator, methamphetamine-related arrests, number of controlled substance (CS) prescriptions dispensed, and population. Data sources include the Kentucky All Schedule Prescription Electronic Reporting Program, the Kentucky Inpatient Discharge Data Set, the Kentucky State Policy Crime in Kentucky Report, and Clandestine Laboratory Surveillance System. **RESULTS:** PSE sales were not associated with methamphetamine-related hospitalizations in this model. The number of clandestine lab incidents reported, however, has a strong positive impact on methamphetamine-related hospitalizations ($p<0.001$). Methamphetamine-related arrests also have a strong positive relationship to hospitalization ($p<0.001$). Finally, use of controlled substances has a small but negative impact on methamphetamine-related hospitalization ($p<0.05$). **CONCLUSIONS:** PSE sales data alone cannot be used to predict methamphetamine use as evidenced by methamphetamine-related hospitalizations. The number of clandestine lab incidents, however, reported is strongly associated with methamphetamine-related hospitalizations. These findings suggest that policies aimed at reducing clandestine labs may have a significant impact on indicators of methamphetamine use.

MENTAL HEALTH – Research on Methods

PMH83
COMPARISON OF TOTAL HEALTH CARE COSTS BETWEEN REMITTERS AND NON-REMITTERS FOR SCHIZOPHRENIA PATIENTS FROM A PROSPECTIVE LONGITUDINAL, OBSERVATIONAL STUDY IN THE PRESENCE OF MISSING DATA

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OBJECTIVES: Missing data has presented challenges to health economic analyses, especially for a long-term observational study with repeated measures of clinical and economic outcomes. The aim of this analysis was to compare the total health care costs between symptom remission and non-remission from a long-term, observational study using mixed-effects models with and without multiple imputations (MI) of missing data. **METHODS:** Data (N=2282) used for this analysis were from a 3-year observational study of patients treated for schizophrenia in the United States between July 1997 and September 2003. Costs of mental health services were obtained at enrollment and at 6-month intervals during the 3-year follow up. Cohorts of remitters versus non-remitters at enrollment were created using established criteria. Total costs for remitters and non-remitters were compared using mixed-effects models with and without MI based on Markov chain Monte Carlo with multivariate normality assumption (MI-MCMC) or fully conditional specification with predictive mean match method (MI-FCS). All analyses on costs were adjusted for patient's demographics and comorbidities. **RESULTS:** The majority of the patients were male (61.6%) and non-remitters (73.8%) with a mean age of 42 years. Out of 2282 patients, 41.2% had at least 1 visit (out of 7 visits) with missing costs data. Without MI, the total healthcare costs were estimated to be $8689.6 for the non-remitters and $6730.0 for the remitters with a difference of $1959.7 (95% CI: $790 - $3129.4) over a 6-month period ($p=0.001$). The estimated differences in total costs between remitters and non-remitters were $1763.3 over the 6-month period with the MI-MCMC method ($p=0.004$) and $1483.9 with the MI-FCS method ($p=0.009$). **CONCLUSIONS:** Significant differences in total costs between remitters and non-remitters were obtained from this study using mixed-effects models with and without MIs. Further analysis will be conducted to explore MI for estimation of other costs and examine missingness mechanisms.

PMH84
VALIDITY OF ADMINISTRATIVE CLAIMS DATA FOR CALCULATING ADHERENCE MEASURES FOR LONG-ACTING INJECTABLE (LAI) ANTIPSYCHOTIC THERAPIES

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OBJECTIVES: To examine sources of error in claims-based adherence calculations for LAI antipsychotics with potentially invalid days' supply (DS) values and evaluate the assumption that quantity-dispensed (QD) values are in product units. **METHODS:** Pharmacy claims for single-dose LAI antipsychotics dispensed between January 1, 2009 and December 31, 2010 were selected from a large US database. Frequency distributions were generated for observed DS and QD values for each product and dose. Observed QD values on premixed LAI antipsychotic claims were divided by the product's volume to test the assumption that QD was entered in milliliters rather than units. After adjustment to QD for premixed LAI antipsychotic claims, duration of therapy per injection was calculated for all LAI antipsychotics as DS/QD. Calculated therapy duration was compared with the dosing interval in the product's package insert (PI). Percentage of claims with duration of therapy per injection within the product's PI range was calculated as a measure of the validity of the observed DS value. **RESULTS:** For the 611,325 LAI antipsychotic claims analyzed, observed QD values ranged from 0.01 to 117, suggesting values that did not always represent product units. After adjustment to QD for premixed LAI antipsychotics, 98.5% of claims had an integer value for calculated quantity in product units, supporting the assumption that premixed LAI antipsychotics' quantities were entered in milliliters. After adjustment, 21.5% of claims had a calculated therapy duration per injection outside the PI range. Percentage of claims with calculated therapy durations outside the PI ranged from 10.6% to 39.1% for paliperidone palmitate, 7.6% to 13.1% for risperidone long-acting injection, and 3.1% to 10.8% for olanzapine pamoate. **CONCLUSIONS:** Results raise concerns regarding potentially invalid values in DS and QD fields. Algorithms for appropriate use of LAI antipsychotic pharmacy claims in adherence calculations, quality measurement, and cost analyses are recommended.

PMH85
AN APPLICATION OF GROUP-BASED MODELING APPROACH FOR TRAJECTORY RECOGNITION: THE DEVELOPMENTAL COURSES OF HYPERACTIVITY AND INATTENTIVE SYMPTOMS

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OBJECTIVES: Uncertainty remains regarding the developmental courses of inattentive (IN) and hyperactivity (HA) symptoms. Using group-based trajectory modeling, we sought to identify distinct independent and joint IN/HA symptom trajectories and their predictors. **METHODS:** A total of 1037 boys (mean age: 6.2±0.3 years) from low socioeconomic areas in Montreal were recruited in 1984 for the Longitudinal and Experimental Study of Low Socioeconomic Status (SES) Boys in Montreal. Teacher and mother ratings of subjects' IN and HA symptoms were collected annually at ages 6, and 10 to 15 using the Social Behavior Questionnaire, where the higher of the two raters' scores was taken as subject's IN/HA score. Numbers and probabilities of independent IN and HA trajectories were identified using group-based semi-parametric mixture models. Joint IN/HA trajectories were then constructed as the joint probabilities of independent IN/HA trajectories. Multinomial logistic regressions were conducted to assess baseline parental and subject behavioral problems as predictors of joint trajectories. **RESULTS:** Six and five independent trajectories were generated for IN and HA symptoms, respectively, constituting 30 joint trajectories. The most common independent IN trajectory (29.5% of study sample) had a moderate number of IN symptoms at baseline that increased slightly with age (moderate-slightly rising), whereas the most common independent HA trajectory (28.5%) was baseline moderate-sharply declining. The most common joint trajectories were based on the co-occurrence of a moderate-sharply rising IN trajectory, and a low-/moderate-slightly rising HA trajectory (17% vs. 14%). Subjects' aggressiveness, conduct-, oppositional-, and anti-social problems ($p<0.001$), and paternal SES ($p=0.01$) were significant predictors of joint trajectories. **CONCLUSIONS:** Group-based trajectory modeling may be a useful time-dependent pattern recognition tool. It enabled the identification of distinct independent and joint IN/HA trajectories in age-related developmental courses. Assessing baseline behavioral problems and paternal SES may help identify and target interventions for young boys at risk of high-level IN/HA symptoms early on.

PMH86
TIME-ON-THERAPY FOR ATYPICAL ANTIPSYCHOTICS IN A MARKOV COHORT ANALYSIS

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OBJECTIVES: To demonstrate a unique approach to modeling long-term time-on-therapy and cardiovascular disease (CVD) outcomes of patients with schizophrenia treated with atypical antipsychotics (AAPs). **METHODS:** A 5-year Markov cohort analysis among adult patients with schizophrenia was undertaken to compare time-on-therapy and CVD outcome differences lurasidone, generic-olanzapine, aripiprazole, quetiapine, and ziprasidone. Modeled health states were: patients on initial AAP; patients switched to a second composite-AAP; and patients on clozapine after failing a second composite-AAP. The composite-AAP health state simulated frequent treatment switching and was operationalized by averaging outcomes, costs, and discontinuation rates (for transition probabilities) of the AAPs. Patients discontinuing composite-AAP due to lack of efficacy were switched to clozapine. Time-on-therapy was modeled using sub-states based on time of switching. Baseline characteristics of the modeled cohort, data for discontinuation rates, and average weight change were obtained from CATIE, a comparative clinical trial of lurasidone vs quetiapine XR, and an open-label study comparing aripiprazole and olanzapine. Relative risk of diabetes obtained from a retrospective analysis predicted CVD events using Framingham BMI risk equations. **RESULTS:** Over 5 years, patient time-on-therapy for the initial-AAP, composite-AAP, and clozapine, respectively, was 0.85, 3.13, 1.01 years (lurasidone); 1.00, 2.98, 1.02 (generic-olanzapine); 0.51, 3.41, 1.08 (aripiprazole); 0.47, 3.45, 1.08 (quetiapine); and 0.54, 3.37, 1.09 (ziprasidone). In a 10,000 patient cohort, there were 407, 434, 415, 416, and 412 CVD events, respectively, in the lurasidone, generic-olanzapine, aripiprazole, quetiapine, and ziprasidone arms. **CONCLUSIONS:** This long-term Markov cohort model simulates multiple treatment switches by using a composite health state from sub-states and also enabled outcome assessment of time-dependent patient characteristics, such as CVD events. The results were consistent with published Markov micro-simulation models showing that lurasidone and generic-olanzapine had favorable discontinuation rates and that lurasidone and ziprasidone had fewer CVD events. This analysis represents an effective alternative for modeling cohort-level outcomes.

PMH87
CROSS-CULTURAL ADAPTATION OF A RESEARCH VERSION OF THE REY AUDITORY VERBAL LEARNING TEST (RAVLT) INTO (US) SPANISH

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OBJECTIVES: The Rey Auditory Verbal Learning Test (RAVLT) was developed to evaluate verbal memory. The standard form comprises a 15-word list (List A) learn-